

## CLAIMS

1. An isolation barrier coupled between a system side device and a line side device, said isolation barrier comprising a transformer and a controlled impedance module;

5       said system side device being configured to generate an amplitude modulated clock signal when said system side device is in a transmit mode, and being further configured to generate an unmodulated clock signal when said system side device is in a receive mode;

10      said controlled impedance module and said line side device being configured to cause said unmodulated clock signal to be amplitude modulated when said system side device is in said receive mode;

15      said transformer being configured to provide to said line side device said amplitude modulated clock signal generated by said system side device, and being further configured to provide to said system side device said clock signal amplitude modulated by said controlled impedance module and said line side device.

2. The isolation barrier of claim 1 wherein said isolation barrier further comprises a comparator, said comparator receiving said clock signal amplitude modulated by said controlled impedance module and said line side device, and said comparator outputting a demodulated clock signal to said system side device.

20      3. The isolation barrier of claim 1 wherein said system side device generates

said amplitude modulated clock signal by a power-clock driver.

4. The isolation barrier of claim 1 wherein said system side device provides power to said line side device through said amplitude modulated clock signal when said  
5 system side device is in said transmit mode.

5. The isolation barrier of claim 1 wherein said system side device provides power to said line side device through said unmodulated clock signal.

10 6. The isolation barrier of claim 5 wherein said line side device causes said controlled impedance device to consume power from said unmodulated clock signal according to data being transmitted by said line side device.

15 7. The isolation barrier of claim 3 wherein said power-clock driver generates said amplitude modulated clock signal according to data being transmitted from said system side device.

8. The isolation barrier of claim 1 wherein said controlled impedance module comprises at least one transistor.

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9. The isolation barrier of claim 1 wherein said transformer substantially prevents noise from said line side device to pass through to said system side device.

10. The isolation barrier of claim 1 wherein said transformer substantially prevents a line side device ground voltage change from causing a system side device ground voltage change.

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11. A telecommunications device comprising:  
a line side device for interfacing with a telephone line;  
a system side device for interfacing with a computer;  
an isolation barrier for coupling said line side device to said system side device,

10 thereby causing data to be transmitted from said system side device to said line side device when said system side device is in a transmit mode, and causing data to be received by said system side device from said line side device when said system side device is in a receive mode.

15 12. The telecommunications device of claim 11 wherein said system side device generates an amplitude modulated clock signal when said system side device is in said transmit mode.

13. The telecommunications device of claim 11 wherein said system side device  
20 generates an unmodulated clock signal when said system side device is in said receive mode.

14. The telecommunications device of claim 13 wherein said line side device

causes said unmodulated clock signal to be amplitude modulated when said system side device is in said receive mode.

15. The telecommunications device of claim 14 wherein said line side device  
5 utilizes a controlled impedance module in said isolation barrier for causing said unmodulated clock signal to be amplitude modulated when said system side device is in said receive mode.

16. The telecommunications device of claim 11 wherein said isolation barrier  
10 comprises a transformer configured to provide to said line side device an amplitude modulated clock signal generated by said system side device, and further configured to provide to said system side device a clock signal amplitude modulated by said line side device.

15 17. The telecommunications device of claim 11 further comprising a comparator, said comparator receiving a clock signal amplitude modulated by said line said device, and said comparator outputting a demodulated clock signal to said system side device.

20 18. The telecommunications device of claim 12 wherein said system side device generates said amplitude modulated clock signal by a power-clock driver.

19. The telecommunications device of claim 12 wherein said system side device provides power to said line side device through said amplitude modulated clock signal.

20. The telecommunications device of claim 13 wherein said system side device provides power to said line side device through said unmodulated clock signal.